CLAIMS

We claim:

1. A package for a die comprising:

a leadframe, having a cavity, being operative to provide structural integrity;

a slug of thermally conductive material, positioned at the base of the cavity; and

a lens, positioned within the leadframe and opposing the cavity, being operative to provide optical functionality.

2. A package, as defined in claim 1, further including a submount of thermally conductive material, connected to the slug.

3. A package, as defined in claim 2, wherein the thermally conductive material is selected from a group that includes pure materials, compounds, and composites of silver, copper, diamond, silicon, aluminum, tungsten, molybdenum, and beryllia.

4. A package, as defined in claim 1, wherein the thermally conductive material is selected from a group that includes pure materials, compounds, and composites of silver, copper, diamond, silicon, aluminum, tungsten, molybdenum, and beryllia.

5. A package, as defined in claim 1, further comprising:

a die that is thermally connected to the slug; and

an optically transparent material, encapsulating the die, having a hardness less than Shore 10A.

6. A package, as defined in claim 1, further comprising:

a die that is thermally connected to the slug; and

an optically transparent encapsulant that has a hardness of at least Shore 50D.

7. A die assembly, as defined in claim 5, further comprising a submount of thermally conductive material connected between the die and the slug.

8. A die assembly, as defined in claim 7, wherein the thermally conductive material of the slug and the submount are selected from a group that includes pure materials, compounds, and composites of silver, copper, diamond, silicon, aluminum, tungsten, molybdenum, and beryllia.

9. A die assembly, as defined in claim 5, wherein the thermally conductive material of the slug and the submount are selected from a group that includes pure materials, compounds, and composites of silver, copper, diamond, silicon, aluminum, tungsten, molybdenum, and beryllia.

10. A die assembly, as defined in claim 5, further comprising a reflector cup, positioned near the slug, having a reflective surface.

11. A die assembly, as defined in claim 10, wherein the reflector cup is integrated into the leadframe.

12. A die assembly, as defined in claim 11, wherein the reflector cup is selected from a group that includes silver, aluminum, gold, silver with a dielectric coating, gold with a dielectric coating, and aluminum with a dielectric coating.

13. A die assembly, as defined in claim 12, wherein the reflective surface is selected from a group that includes silver, aluminum, gold, silver with a dielectric coating, gold with a dielectric coating, and aluminum with a dielectric coating.

14. A die assembly, as defined in claim 12, wherein the reflective surface includes at least one totally internal reflective surface formed by refractive index step changes > .3.

15. A package, as defined in claim 1, further comprising a reflector cup, positioned near the slug, having a reflective surface.

16. A package, as defined in claim 15, wherein the reflector cup is integrated into the leadframe.

17. A package, as defined in claim 16, wherein the reflector cup is selected from a group that includes silver, aluminum, gold, silver with a dielectric coating, gold with a dielectric coating, and aluminum with a dielectric coating.

18. A package, as defined in claim 17, wherein the reflective surface is selected from a group that includes silver, aluminum, gold, silver with a dielectric coating, gold with a dielectric coating, and aluminum with a dielectric coating.

19. A package, as defined in claim 17, wherein the reflective surface includes at least one totally internal reflective surface formed by refractive index step changes > 0.3.